AMENDMENTS TO THE SPECIFICATION

IN THE ABSTRACT:

Please amend the Abstract of the Disclosure as follows (a clean copy of the amended abstract is attached hereto):

Abstract

A polishing composition for a substrate for memory hard disk, comprising silica particles in an aqueous medium, wherein the silica particles satisfy a specified relationship between an average particle size of the silica particles on the number basis and a standard deviation on the number basis, wherein the average particle size is obtained by a determination by transmission electron microscope (TEM) observation, and wherein a particle size and a cumulative volume frequency in a range of particle sizes of from 60 to 120 nm satisfies a specified relationship; a method of reducing microwaviness of a substrate for memory hard disk, comprising the step of polishing the substrate for memory hard disk with the polishing composition; and a method for manufacturing a substrate for memory hard disk, comprising the step of polishing [[an]] a Ni-P plated substrate for memory hard disk with the polishing composition. The method can be suitably used for the manufacture of a substrate for precision parts, such as a substrate for memory hard disk.

IN THE SPECIFICATION:

PAGE 2

Please amend the paragraph beginning at Page 2, line 9 as follows:

The present invention relates to:

[1] a polishing composition for a substrate for memory hard disk, comprising silica particles in an aqueous medium, wherein the silica particles satisfy a relationship between an average particle size (r) of the silica particles on the number basis and a standard deviation (σ) on the number basis of the following formula (1):

$$\sigma \geq 0.3 \times r \quad (1)$$

wherein r is an average particle size (nm) of the silica particles on the number basis, and σ is a standard deviation (nm) on the number basis, wherein the average particle size is obtained by a determination by transmission electron microscope (TEM) observation, and wherein a relationship between a particle size (R) and a cumulative volume frequency (V) in a range of particle sizes of from 60 to 120 nm satisfies the following formulas (2) and (3):

$$V \geq 0.5 \times R \quad (2)$$

$$V \leq 0.25 \times R + 75 \quad (3)$$

wherein R is a particle size (nm) of the silica particles, and V is a cumulative volume frequency (%) counted from a small particle size side of the silica particles;

[2] a method of reducing microwaviness of a substrate for memory hard disk, comprising the step of polishing the substrate for memory hard disk with the polishing composition of item [1] above; and

[3] a method for manufacturing a substrate for memory hard disk, comprising the step of polishing [[an]] a Ni-P plated substrate for memory hard disk with the polishing composition of item [1] above.

PAGE 5

Please amend the paragraph beginning at Page 5, line 7 as follows:

Generally, the microwaviness of a surface of a polished object is determined as an average of each of its parts, which are picked up randomly from the surface of the polished object. The microwaviness is not even in individual positions of the surface of the object and usually shows a considerably large variance. Therefore, in order to obtain the microwaviness of the surface of the object the measurement positions and the number of measurements must be determined, so that the population mean can be effectively deduced. Hence, the reliability of the data greatly depends on the selection of the measurement positions and the number of

measurements. In the present invention, the microwaviness is obtained by this method having higher reliability.

PAGE 6

Please amend the paragraph beginning at Page 6, line 2 as follows:

The particle size distribution of the above mentioned silica particles can be determined by the method described below. Specifically, photographs of the silica particles observed by a transmission electron microscope (TEM) "JEM-2000 FX" commercially available from JEOL LTD. (80 kV, magnification: 10000 to 50000) are incorporated into a personal computer as image data with a scanner connected thereto. The projected area diameter of individual silica particles for 1000 or more is determined using an analysis software "WinROOF" (commercially available from MITANI CORPORATION), and considered as the diameter of the silica particles. By analyzing data using the spreadsheet software "EXCEL" (commercially available from Microsoft Corporation), an average particle size (r) and a standard deviation (σ) on the number basis are obtained.

PAGE 8

Please amend the paragraph beginning at Page 8, line 24 as follows:

In the present invention, the above-mentioned formula (1) is an index showing the spread of the particle size distribution of the silica particles. The silica particles having a particle size distribution within the specified range ~~mean~~ means that the silica particles have a particle size distribution, the spread of which is a given level or more.

PAGE 9

Please amend the paragraph beginning at Page 9, line 4 as follows:

Also, in the present invention, the above-mentioned formulas (2) and (3) are indices each showing a ratio of the silica particles existing therein. The silica particles satisfying the above-mentioned formulas (2) and (3) within the range of particles size of from 60 to 120 nm ~~mean~~ means that the silica particles contain silica particles having a given particle size in a given ratio or more.

Please amend the paragraph beginning at Page 9, line 11 as follows:

In addition, the silica particles have a particle size distribution in which the relationship between R and V preferably satisfies the formula (13):

$$V \leq (2/3) \times R + 50 \quad (13)$$

within a range of particle sizes of from 5 to 60 nm, from the viewpoint of an excellent reduction in the generation of carrier squeals. It is more preferable that the silica particles have a particle size distribution in which the relationship between R and V satisfies the formula (14):

$$V \geq R - 30 \quad (14)$$

within a range of particle sizes of from 30 to 60 nm, from the viewpoint of an excellent reduction in micropits.

PAGE 16

Please amend the paragraph beginning at Page 16, line 16 as follows:

The concentration of each component of the above-mentioned polishing composition may be any one of the concentration during the preparation of the composition and the concentration upon use. In many cases, the polishing composition is usually prepared as a concentrate, which is diluted upon use.

Please amend the paragraph beginning at Page 16, line 20 as follows:

In addition, there can be added other ~~component~~ component(s) to the polishing composition of the present invention as occasion demands. The other ~~component includes~~ component(s) include

thickeners, dispersing agents, anticorrosive agents, basic substances, surfactants, and the like.

PAGE 19

Please amend the paragraph beginning at Page 19, line 20 as follows:

In addition, in one embodiment of the present invention, there is provided a method for manufacturing a substrate for a disk including the step of polishing a substrate to be polished with the polishing composition of the present invention, even more preferably a method for manufacturing a substrate for a disk including the step of polishing **[[an]]** a Ni-P plated substrate for a disk with the polishing composition of the present invention.

PAGE 20

Please amend the paragraph beginning at Page 20, line 1 as follows:

The method for manufacturing **[[an]]** a Ni-P plated substrate for a disk of the present invention (hereinafter referred to as the method for manufacturing a substrate for a disk), includes the step of polishing the substrate with the polishing composition of the present invention. This step is preferably carried out in the second step or subsequent steps among the plural polishing steps, and more preferably in the final polishing step. For instance, the above-mentioned substrate for a disk, e.g., **[[an]]** a Ni-P plated

aluminum alloy substrate, of which short wavelength waviness is adjusted to from 0.4 to 0.6 nm and long wavelength waviness is adjusted to from 0.35 to 0.5 nm as the microwaviness, obtained in the first polishing step or the second polishing step, in which the polishing slurry containing a known abrasive, such as alumina abrasive grains, is used, is further polished by the polishing process with the polishing composition of the present invention. The polishing step with the polishing composition of the present invention may be carried out in the same manner as the above-mentioned method of reducing microwaviness of a substrate for a disk.

Please amend the paragraph beginning at Page 20, line 23 as follows:

According to the method for manufacturing a substrate for a disk of the present invention, **[[an]]** a Ni-P plated substrate for a disk, having reduced microwaviness and an excellent surface smoothness can be efficiently manufactured.

PAGE 21

Please amend the paragraph beginning at Page 21, line 10 as follows:

Each of the polishing compositions obtained in the following Examples and Comparative Examples was evaluated for its polishing

properties against [[an]] a Ni-P plated, aluminum alloy substrate having a thickness of 1.27 mm, and a diameter of 95 mm which was previously roughly polished with a polishing slurry containing alumina abrasives so that the substrate had a short-wavelength waviness of 0.5 nm and a long-wavelength waviness of 0.45 nm as microwaviness as a substrate to be polished.

PAGE 25

Please amend the paragraph beginning at Page 25, line 7 as follows:

Using silica particles in the form of slurry as a sample, the sample was observed with a transmission electron microscope "JEM-2000FX" commercially available from JEOL, LTD. (80 kV, magnification: 10000 to 50000 times), and its TEM image was photographed. Each of the photographs was incorporated into a personal computer as image data with a scanner connected thereto. The projected area diameter of individual silica particles was determined using [[an]] the analysis software "WinROOF" (commercially available from MITANI CORPORATION), and considered as the diameter of silica particles. After analyzing data for 1000 or more silica particles, the average particle size and the standard deviation on the number basis of the silica particles were calculated from the diameters of the silica particles based on the analyzed data using [[a]] the spreadsheet software "EXCEL"

(commercially available from Microsoft Corporation). The results are shown in Table 2.

PAGE 26

Please amend the paragraph beginning at Page 26, line 3 (i.e., the paragraph starting immediately after Table 2) as follows:

On the ~~bases~~ basis of the particle size distribution data of the silica particles obtained by changing from the diameters of the silica particles using [[a]] the spreadsheet software "EXCEL" to particle volumes, a proportion (% on volume basis) of the particles having a given particle size is expressed as a cumulative frequency of the silica particles counted from a small particle size side in the entire particles, to give a cumulative volume frequency (%).

Please amend the paragraph beginning at Page 26, line 9 (i.e., the second paragraph after Table 2) as follows:

On the ~~bases~~ basis of the particle sizes of the silica particles and the data for the cumulative volume frequency obtained as described above, the cumulative volume frequency was plotted against the particle size, to give a graph of particle size-cumulative volume frequency.